

"If war were declared to-morrow, what would we do for aircraft?"

AVIATION

APRIL 30, 1923

Issued Weekly

PRICE 10 CENTS



Dayton Wright "Chummy" Two-Seater fitted as a seaplane

VOLUME
XIV

SPECIAL FEATURES

Number
18

- AMERICAN AIRPLANE SPEED RECORDS
- MARTIN-NAVY SHIPBOARD SCOUT SEAPLANE
- PROPOSALS FOR CONTRACT AIR MAIL SERVICES
- DAYTON WRIGHT "CHUMMY" SPORT PLANE DESCRIBED

THE GARDNER, MOFFAT CO., INC.

HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK

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APRIL 30, 1923

VOL. XIV. NO. 18

AVIATION

Member of the Audit Bureau of Circulations

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During thirteen years of airplane manufacturing, The Glenn L. Martin Company has established an enviable reputation for progressive design, development and construction.

To a large degree, this has been attained through careful and painstaking investigation and original research work. Not only have theories been formulated, but apparatus has been originated to check and establish the sound-

ness and practicability of such theories.

The Glenn L. Martin Company believes that there must be no let-up in aeronautical research work and with that thought in mind has expanded its engineering and development organizations, to a stronger position than ever before in its history.

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AVIATION

Vol. XIV

APRIL 20, 1931

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NO. 15

Economized Airplane

THOSE who have entertained doubts regarding the practical value of the extensive gliding experiments Europe has been pursuing during the past two years, may find satisfaction in the news of the successful trials of the Dewolfe "light plane" or low-powered airplane.

This remarkable machine is a simple adaptation of the glider with which the French pilot Berliet made an eight and a half hour materials flight in Algeria some time ago. Fitted with a 7-10 hp. engine the little ship has down to gross weight of 550 lb. at a high speed of 56 m.p.h. has climbed 3300 ft. and landed at 30 m.p.h. The power required for a running speed of 45 m.p.h. is only 5% hp., which comes to say that in flight this machine carries 300 lb. per horsepower as against 12 to 15 lb. for the relatively commercial airplane.

These figures reveal extraordinary at first sight and their accuracy might be questioned were it not for the fact that M. Dewolfe, the designer of this light plane, is also the constructor of successful high powered airplanes. An interview given in a French contemporary, M. Dewolfe declared that his light plane is not an attempt to produce an "aerodynamic airplane," that is, a hydrodynamic vessel that would run fast, but one, a hydro airplane that could run fast, even though it had no power plant, according to wind conditions. On the contrary, what the French constructor intended to prove was that one could obtain through the application of improved aerodynamics an airplane of immensely superior power economy than has hitherto been believed possible. He also points out that such a development, far from being detrimental in producing underpowered "light" machines, will benefit all types of flying machines, from the low powered glider up to the heavy transport planes.

These facts we fully share, for while the Dewolfe light plane may be low-powered, for the practical purpose of even a sport machine, it should be remembered that this is but an experimental step with which the constructeur already wishes to make a "surprising" demonstration. On the other hand, if as a result of these experiments it should become possible to build in a few years efficient commercial airplanes having but one-half as many but one-third the power loading of the Dewolfe light plane, they would be so far superior to our present day designs that it would fundamentally alter the whole problem of air transport economics. A commercial airplane that would carry from 15 to 20 lb. of pay load per horsepower would become a paying proposition indeed, for this would mean in the case of Mail Air a commercial load of from \$600 to \$800.

Obviously, we are but at the threshold of some very important developments in greater power flight economy. The

introduction of power with which present day airplanes are provided through the air for lack of more efficient wing curves is one of the persistent after effects of the war, when the quickest way to get improved performance was to pile horsepower upon horsepower. Such a course may be justified from the military viewpoint, but the commercial aspect of the question demands a more rational solution.

That the first step in the right direction should have been made as a direct result of experiments with gliding machines is a striking illustration of their value for developing better aerodynamic and aerodynamic combinations. Gliding contests offer a wonderful opportunity for testing full size aircraft under conditions which it is impossible to duplicate in a wind tunnel. Hence we welcome the gliding flight competition which the National Aeromobile Association suggests and sponsor on the Pacific Coast.

The National Balloon Race

THE announcement of the National Balloon Race, to be held this year from Indianapolis July 4, gives promise of different conditions than have applied for many years. The light balloonists will give little chance for record distances but will emphasize the importance of individual skill on the part of the contestants. The balloon position, with plenty of room for maneuvering at the start, will be no important factor in the pilot who is trying to lead a sustained course through the varied air currents, at the same time dodging blunder-busses and maneuvering to reach as possible his fast travelling supply of ballast. All agree we can expect some very interesting experiences. In fact the whole history of this oldest American classic of the air shows no two races to be even remotely similar. Perhaps this is very easily the greatest in balloon racing, as the years pass, a constantly increasing variety. Certainly, it is hard to think of the great advances in power driven aircraft (or it is perhaps because of it) the first balloon and glider race in a straight position today than ever before.

From a developmental standpoint, the peculiar value of ballooning is as a laboratory for training and experience in aerostatics, navigation, and meteorology. But undoubtedly its strongest appeal lies in the realm of pure sport. It is a race to man's control of wind, courage and endurance, where the vehicle plays but a minor though necessary part. Else one need forget about aerodynamics and performance tests. The race is the test, and the winner is he who can use to the best advantage the very forces of Nature himself!

We congratulate Indianapolis, for induction all point to the biggest race of its kind ever held in this country.

"If war were declared tomorrow what would we do for aircraft?"

Contract Air Mail Services Advertised

Post Office Department Asks Bids on Seattle-Victoria and New Orleans-Pilot Town Services

Bidder proposals will be received at the Post Office Department in the City of Washington until 4:30 p. m. of May 28, 1933, for carrying the United States mail on the two routes hereinbefore described from July 1, 1933 (or such subsequent date as the Postmaster may order), to June 26, 1934, in safe and reliable aircraft as follows:

The Two Routes Proposed

1. From Seattle, Washington, to Victoria, British Columbia, about 84 miles, and back, in close connection with Victoria with outgoing and incoming trans-Pacific mail streams, but not exceeding an average of twelve round trips a month, for the transportation of air mail to and from 696 U. S. and a single territorial post office, and for the delivery of airmail to and from the contractor to receive the mails at the foot of Broadacres Street and deliver them at Lake Union at Seattle, and to receive and deliver the mails from and to the shipyards at Victoria. Bids to state rate per round trip. Round required weight, 3,000 lbs.

2. From New Orleans, Louisiana, to Pilotown, Louisiana, about 84 miles, and back, in close connection at Pilotown with outgoing Central American and Mexican, Cuba, steamer, and at Pilotown, or Quarantine, with the same incoming steamer, daily except Sunday and holidays, for the transportation of air mail to and from 696 U. S. and a single territorial post office, and for the delivery of airmail to and from the contractor to receive and deliver the mails at the foot of Canal Street in New Orleans, and to deliver the mails to the steamer at Pilotown or Quarantine, bids to state rate per round trip. Round required weight, 3,000 lbs.

Proposed bidders in these advertisements will be subject to the Postal Laws and Regulations and to the conditions and requirements set forth in the instructions to bidders, copies of which, together with blank form of proposal and accompanying forms, may be obtained from the Second Assistant Postmaster General, Office of the Postmaster General, Washington, D. C., or from the Postmaster at New Orleans, Louisiana.

A definite schedule has not been devised yet. The following is a tentative schedule for proposed route No. 2: leave New Orleans daily except Sundays and holidays and later than 8:00 p. m., state Pilotown or Quarantine daily except Sundays and holidays and later than 8:00 p. m.

Decisions as to award of contracts will be made as soon as practicable after May 25, 1933, and the selected bidders shall receive the formal contract prescribed by the Department covering services advertised with good and sufficient securities acceptable to the Postmaster General, and that the Postmaster General reserves the right to accept or reject all bids.

The contract may be terminated by Congress, or by the Postmaster General whenever, in his judgment, the interests of the Postal Service shall in any way be injured thereby, unless the contractor shall be allowed, at the rate otherwise payable for airmail service, to deduct and represent the present monthly requirement, provided that such termination is not to amount of disfurnished by the part of the contractor or his agents.

No Bidder Should Be

Required to state the number of planes it is proposed to provide for carrying the mails, the ranks (including the names) of the pilots for each plane in the air), descriptions of planes, showing number of seats, horsepower, speed, cruising radius.

Bidders and their agents are urged to acquaint themselves fully with the laws of Congress relating to contracts for carrying the mails (the more important provisions of which are

printed herein) and to familiarize themselves with requirements set forth in this advertisement and with the service to be performed before they assume any liability as bidders or contractors, so as to prevent misapprehension or cause of complaint therewith.

Bidders will be required to furnish bond with two or more and three or four persons approved by a postmaster of the first, second or third class, such bond being acceptable to the Postmaster General, and securities to be shown to be return of real estate valued above \$10,000,000, or an amount double the amount of the bond required, as a surety company which has been in existence at least one year, and approved, May 1, 1932, and March 25, 1933, a bid for such security companies may be found on page 22 of the official Postal Guide for July 1932, a copy of which is furnished each postmaster.

If the accepted bidder fails to file a properly executed proposal within the time allowed by the Department, unless timely filed for cause of appearance of the bid, or having executed the contract fails to provide the service required, he may be declared a failing bidder or contractor and proceedings taken according to law.

Mail compartments in all planes to be made frequent to the Postmaster General's office, Dayton, Ohio.

The Postmaster General may order no increase of service or weight of mail to be transported or number of trips, with the consent of the contractor, by allowing thereafter not to exceed a gain rate increase on the resultant pay for the mileage as weight involved.

Important Provisions of Contract

The contract for the service shall contain the following provisions:

The contractor expressly warrants that he has employed no third persons in which this contract in his behalf, nor to cause or to procure the same to be obtained, or to permit any third person, in his name or in part, upon whom governments and that he has not paid, or promised or agreed to pay to any third person, or consideration of such procurement, or in compensation for services or otherwise therwith, any brokerage, commission, or percentages; and that all money payable to him hereunder for his services, shall be paid him in full, without any deduction or expense to have been rendered, in the procurement of this contract. He further agrees that any benefit of this warranty shall constitute adequate cause for the amendment of the contract by the Postmaster General, and that the United States may refuse to pay to him any amount due him under this contract, or under any other contract to any brokerage, commission or percentage to paid, or agreed to be paid.

No compensation will be allowed for trips not performed. However, gain rate pay will be allowed for the extra distance between stated points on the route covered in a general manner, if no delay in the mail over time or best route had resulted.

Pedictional fuel pay will be made for authorizing the mails to become wet, injured or destroyed, or when a grade of service is rendered inferior to that supplied on the contract; and for the loss of or depreciation upon the mails on the contractor's account or his agent, provided the loss is incurred by such fault.

The Postmaster General may cancel the contract or impose forfeiture, in his discretion, for repeated failure or for failure to perform services according to contract; for violating the Postal Laws and Regulations; for destroying or tampering with the Post Office Department, for violating certain without the consent of the Postmaster General, or for engaging in trans-

acting the contract, for rendering to prevent others from bidding for the performance of postal services, and such an action shall not impair the right of the Department to claim damages from the contractor and his services.

No Assignment of Contracts

Assignment of contracts or of interests in contracts are forbidden by law, and no bidder shall be allowed to offer his bid or enter into contract with another. Holders will therefore take notice that they will be expected to provide the services named to them through the sole contract term.

Contractors under this advertisement may be presented to subcontractors, and the Postmaster General may require the Postmaster General, at not less than the regular rate of pay.

When a bid is signed by an unincorporated company, it should be accompanied by evidence of the authority of the person signing the bid to sign on behalf of the company. Such

vidence may be a certified copy of the proceedings pursuant to which the person was elected or appointed as officer or agent of the company and that part of the by-laws showing that the power to bind the company is given, and, if so, a certified copy of a resolution of the board of directors or stockholders confirming such authority upon him.

Bids should be sent as far in advance as possible, so as to be received in time to be considered by the Postmaster General.

Bids should be forwarded to Postmaster General not later than 4:30 p. m. of May 28, 1933, bids received after that time will not be considered in competition with bids received within the prescribed time.

Bids should be sent in sealed envelopes, superscribed "Airmail Proposal" and addressed to the "Second Assistant Postmaster General, Washington, D. C."

The Dayton Wright "Chummy" Sport Plane

Safety and Low Maintenance Cost Principal Features, Valuable for Cross Country Work

This aircraft is unique in its simplicity from the sportman's viewpoint, will be substantially over a very modern and practical little machine, the "Chummy," designed and developed by

Col V. R. Clark and built by the Dayton Wright Co.

Recently one of this type, serial No. Wright E180 by engine, serial No. 10 Army pilot at MacCoy Field, North Carolina, the Aeroplane Division in Tuckery Field, Washington, D. C., where it was tested by both Army and Navy pilots, held to a land type and as a seaplane. These trials during which it was flown by more than a hundred different pilots of both Services proved conclusively the claims of the manufacturer, as to the safety of the aircraft.

The Dayton Wright "Chummy" is an ideal sportman's plane because of characteristics ensuring safety, and because of the other simplicity throughout, reducing maintenance cost and time to a minimum. Its flight and ground characteristics are such that it can be safely brought up, and down out of the smallest and roughest fields. No damage features make it particularly "dead-proof." To say not of itself all models are perfectly normal and very reliable, is to say if it is possible to the reader, and there is no danger of a violent

upset, of falling off an a wing, or of tail-shearing. Furthermore, it can be loaded on any sort of fashion without danger of risking over or injury to the machine. It has been passed from an altitude of a thousand feet.

Safety from Five Reasons

There is absolutely no gasoline in rear or in the vicinity of the engine. The entire supply of gasoline is contained in two tanks in the upper wing, cutting sample gravity (sof) located well to the rear of the fuselage. These tanks are protected by heavy "dead-proof" rubber fabric covering. The supply valves are located immediately near to the tanks and are easily accessible. The gas tank is located in front of the seat, ready, however, for quick step of the hand in an emergency, (and within easy reach), close both valves instantaneously, thereby sealing both tank and preventing flow of gasoline regardless of how badly the airplane may be wrecked. The air intake to the cylinder leads from the engine with mouth of the intake mechanism. The carburetor is drained by a tube leading through the seating



Front view of the Dayton Wright Model ZB or "Chummy" sport and transport plane. See the front cover illustration.

"If we were declared to-aeronaut what would we do for aircraft?"

"If we were declared to-aeronaut what would we do for aircraft?"

under the engine compartment. The bottom cowling is well ventilated by louvers.

A tight firewall isolates the engine compartment from the rest of the airplane. There is no combustible material whatever forward of the firewall.

and General Questions

Flight tests in which every conceivable maneuver was performed indicate unexcelled flying qualities in this airplane, from the standpoint of safety. The stability in any form is remarkable. It pitch itself out by any degree, the controls are extraordinarily responsive to a touch. The airplane flies a smooth, stable, and certain pattern. The pilot can go down and up and so on, it is most remarkable in recovering from an upside-down attitude.

The landing gear has proven itself in extended service use to be remarkably sturdy and reliable. Its ability to absorb an any attitude of maneuver and handle normally at all times, that is, it is never treacherous in any manner. All controls are light to move, and there is no fear of jamming. The machine has been lowered, lowered, falling-down, etc., but it will not spin under ordinary circumstances.

Many expert pilots who have flown this machine underscored its ability to make a normal snap that the machine fall flat the topsy very slowly and speed of reaction was quite slow. The recovery, when once started, was perfectly normal with no tendency to spin in the control direction. The other planes have been able to start the machine off a spin, completing from one-half to a full turn after which the machine went into a normal spin at spite of the pilot's efforts to maintain a spin. No other pilot has been able even to start a spin. The tendency, when passing the rudder violently on a climb, is to roll over.

It is believed that it would be impossible for a novice to spin this machine, although it may be possible for an expert instructor to teach him the first while starting into a spin. It is felt that this is the greatest possible step toward safety in learning to fly.

Structural Strength

Complete static tests made by the Kraghengen Division, Aeroflot, were made to determine the ultimate safety of all parts—airframe, engine, propeller, and fittings. All fittings for the propeller, engine, and airframe are laminated, ensuring durability and safety even though one piece of steel develop a flaw.

The seating arrangement is such that there is no strain between engine and occupants, together with the soft seat and backrest which will not jar the operator. A notable feature is the side seats, which are mounted in the main nacelle in front of the heads of the occupants; these are fully shielded with leather or, there, mounted on a light plywood board. The seats are so located that both men are in rear of both wings and their breathing, so that they are easily got in and out without detracting from the floor space. As a consequence, it takes of minutes to get from ready room to water, and it is easy to load and leave normally. The thonda seat is very sturdy construction.

This machine has been landed, taken off, and taxied, with strong cross, quartering, and tail winds. The wide landing gear, together with steerable tail skid, render the machine safe against accidents on the ground. There is no tendency to precess or yaw, except slightly. The wheels are well balanced and the machine has been landed in very soft mud without tendency to nose over.

Cross Country Work

The type of landing gear, although quite heavy, presents some interesting advantages. The elimination of a long metal strut to support the rear landing gear reduces the weight of the machine and permits the use of a much lighter gear. The machine can take off in a field of tall weeds or grass in a very short run, when it would be impossible for a machine with the horizontal cross side, so low off the ground, because of the tremendous resistance ordinarily due to the

wheels being blown back over the horizontal cross side by the propeller blast. On an ordinary airframe, the machine takes off and the subsequent climb is extremely good. The control at slow speeds is so responsible, positive, and reliable that the pilot, while maneuvering in approaching, as getting out of a seat, or in a turn, is a factor in the machine's safety as "margin of safety" in conditions of an emergency stop, take-off, and "stalls" with perfect safety. The machine does not "stall" before landing, but gets on the ground immediately and stops quickly after touching.

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Maintenance

Another great advantage of the side-by-side arrangement is that, while, through the student, the machine becomes a "one-man" aircraft, the student learns in a tandem machine, where they can readily roll over both sides, will become entirely accustomed to taking over the same side in landing and taking-off, and will hence, as accustomed to turning in only one direction, that there turns the other way are comparatively poor. The two have proven a fact and is bad. In the side-by-side, the student can land on one side, and turn on the other and will be forced to become equally good on both sides.

Successful flying instruction depends upon: First, confidence in the part of the student; second, complete understanding and harmony between student and instructor. This plane insures both.

Maintenance

Smoothly was the very first consideration throughout the entire design and construction of this airplane. All parts of the power plant are readily accessible and can be inspected, adjusted, removed, and replaced with a minimum of time and effort. The novel wing trussage—only three main with rigid X strut adjustable for position—gives a wing cell which can be assembled very quickly with open wrenches. The X strut can be adjusted to an almost infinite number of positions.

A very advantageous feature relating toward low cost of maintenance is the division of wing surfaces into panels. Thus the welding of one wing tip incorporates only the replacement of one comparatively short panel rather than a total comprising the entire span of the wing.

The entire airplane—fuselage, engine mounting, tail

surfaces, landing gear, interplane struts, etc.—except for wing panel prongs, is made of stainless steel tubing which is not affected by chemical changes however severe. The wing panels are built of spruce with no glue or varnish. In the event of a wreck, the entire rear portion of the fuselage, including the tail, can be easily removed from the forward portion, thus facilitating removing from the tail. The horizontal stabilizer and the wing X strut may be adjusted for longitudinal or lateral balance in a few seconds, the only operation necessary being the raising of a box with a wrench. All tail surfaces may be quickly replaced. The landing gear complete, or a wheel, or an axle, or the tail skid, or the entire gear may be replaced in a few seconds.

A considerable amount of time and thought in the development of the design of this machine has resulted in the reduction of the number of parts to a minimum, simplicity in construction and economy of these parts, and understandability to an extraordinary degree. As an example, the movable tail surfaces, centerline and right and left elevators, are of identical and interchangeable.

The key in front of the two pilots is designed solely as a noticeable value for two additional passengers, whose weight is exactly at the center of gravity of the machine. This plane, 40 or 50 lbs, however, is used considerably for baggage, mail, express, or even for extra fuel tanks.

The machine can be converted from biplane into a seaplane, by three men, in five hours.

CHARACTERISTICS OF THE DAYTON WRIGHT "CHIEFTAIN"

Length 36 ft. 6 in.

Width overall, 8 ft. 10 in. 16

Front wing span, 10 ft. 6 in.

Rear wing span, 10 ft. 6 in.

Height overall, 10 ft. 6 in.

Wingspan A, 10 ft. 10 in. 16

Wingspan B, 10 ft. 6 in.

Width overall, 8 ft. 10 in.

New Type of Aircraft—the Jumping Balloon

Manually Operated Propeller Gives Five Pounds of Ballast or of Lift

A balloon of 2000 cu. ft. capacity, fully equipped, capable of lifting a 150 lb. man and remaining in the air for four hours at a time with the expenditure of no more than 35 ft. of fuel oil, may seem like an anomaly to old balloon men. Yet such a balloon actually exists and was developed within the past year by balloon pilots and engineers of the Army Air Service, Engineering Division, McCook Field, Dayton, Ohio.

The Novel Feature

The novel feature embodied in the construction of the above equipment is the addition of a third means of control, consisting of a propeller mounted just below the constricting point of the jumping, and driven by a rope that goes from the center of a pulley which either up or down, is easily obtainable with that propeller, which of course means that the square feet of 5 ft. of ballast or the lifting force of sheet No. 50 ft. of kynolene can be increased or decreased at will. A small worker basket or a parabolic harness is suspended to the propeller mechanism for carrying the pilot. When ordinary flights are made the basket is used, but when it is desired to make a landing or drop down, a lot of jumping over trees, houses, and the like, a regular parachute harness is used.

The gas bag is made of single ply muslin cloth with a vertical seam cover from which the reinforcing tape is cemented to every alternate seam near, leading to a point a little below the equator. At these points the suspension ropes are attached by means of eyelets, which are of the standard type. The eyelets of the suspension ropes are fitted with snap. These snaps provide a convenient and quick method for attaching the propeller mechanism with its belt and propeller to the suspension ropes. The propeller assembly consists of a circular metal plate, with holes drilled near its periphery to accommodate the snap fittings of the suspension ropes. The center of the suspension ring has a hole through which the propeller shaft and belt fit to the basket mechanism without encroaching much of the pilot. Provision is also made for carrying a small number which can be slipped down to the end of the drag rope in case it is desired to use an anchor in landing. In the event that there is no wind, however, it may be necessary to use a propeller to assist in landing.



Jumping balloon with the pilot in a parabolic harness.

car with ordinary equipment consists of a series of steps and falls, the balloon never reaching a point of equilibrium but such time overshooting the mark due to its momentum. It is at once apparent that a series of some description that may be used to check the speed of the machine or decreasing the rate of fall of the pilot, or even prolonging the time of the swing offered in balloon and hot air.

The propeller control may be considered as an aerial brake and at this point has proven itself of great value in every test that has been conducted with the hot air balloon. The first point that it will not only check the speed of the balloon and bring it gradually to an equilibrium point but will readily compensate for all velocity changes in any direction, whether of passing clouds and other factors. It can also be used to aid greatly in a maneuver with a slightly heavier weight of front gondola surrounded by balloons and other obstacles. Any one who has ever been in a hot air balloon to get safely out of each pilot is in the usual practice with ordinary equipment to expand noninflatable ballast to start with, and thus cause either going to a high altitude or resorting to valving off the gas to let the obstacles have been cleared.

The weight of this balloon with basket, propeller mechanism and drag rope is approximately 1100 lb. It has to be tested to a safe enough altitude to be certain of the safety of the crew. The propeller blades are fixed into sockets on the hub of the propeller shaft and are easily removable.

The primary object in developing such a device and light equipment was to provide a simple means for preliminary training in free ballooning and a method more suitable for giving instruction than that used in large balloons. Many students are now in some degree familiar with the intricacies of the instructive swing along all the paths.

The size of this new craft is far the pilot to take the balloon controls and the pilot to control the balloon, with the balloon carrying a student and all surrounding under the direction of the pilot. In the summer of last year he has been successful in landing from the very start and is able to feel a responsibility not sustainable with the ordinary method of maneuvering. A few tests in the winter season have shown that the student is quite comfortable in learning how to control and get under the present method of training. Aside from this, four or five small balloons that are able to stay together, each under the control of the pilot, should afford a sporting feature for more agreeable and exciting in every respect than the ordinary methods of flying. This is the reason that such a number of people, for the reasons that such work makes him more individual looking. This feature in the use of the small balloons has not been demonstrated fully as yet, but preparations are now made way to make trials and experiments with this object in view.

Effect of the Propeller Control

When one considers that a free balloon journey in unstable

conditions approach the speed of a parachute drop after he has learned the better methods of striking the ground with his feet at the slower speeds.

Judging from the great amount of interest that has been shown by people who have seen this balloon in operation, it is apparent that a small craft aircraft of this description should be a valuable means of greatly stimulating public interest in aeronautical development by getting many people into the air.

It is expected that by the time the next National Balloon Elimination Race is held, "Jumping Balloons" systems will be staged preference to the next event.

Book Review

METALS AND THEIR ALLOYS. By Charles Veltman, 460 pp., \$12. (Harcourt, Brace & World, Inc., N.Y. 4th Ed., New York.)

This is a thoroughly practical book, descriptive of the best methods of working with, dealing with metals and their alloys. While it is purely based on "Metals Alloys" by Bryant, the author has been so thorough and complete that practically a new book has resulted. The reviewer would like a thoroughly practical treatise.

The chapters on the care of the tools, the making of dies, the use of hammers, chisel, steam wrench and coated dies are encoded with formulas together with the physical properties of the alloys and their cutting characteristics. Simplicity in the language of this new book on alloys, it is a treasure-house of information for the metallurgist, a convenient reference for the turned metal worker and a valuable guide for the amateur.

The latest information on the subject of successive alloys is presented in the chapter devoted to that subject, and the precautions to be observed when melting and alloying the various groups of alloys are detailed. The chapter on monolithic steels, castings, and of these various types, has an excellent account of the methods of manufacture. Single aluminum is the chapter on die-castings which treats of the die-casting of aluminum as well as of the low-drawing alloys.

These interested in the origin and physical properties of the elements, the methods of obtaining them from their ore, the properties of the steels and their alloys, will find this information in the first part of the book. The second part deals with the discussion of the alloys, which are divided into three classes, each with a different metal as base and which include iron, steel and also alloys having one as a base. This is followed by a chapter dealing with scrap metals and one touching on the analysis of alloys.

No Oil Burning in Spruce Zone

Prospecting for oil or gas upon the military surplus property in Alaska is prohibited by a decree issued by the Department of the Interior.

The question came up as a result of an application of Charles F. Jones for a permit to prospect for oil and gas in the Jensen, Alaska, land district over Mount Fairweather, which is located in the spruce zone where spruce reservation to supply fuel for the construction of a fort.

Alaska has been leased to the United States Government to use the commercial equipment for military purposes such as in giving preliminary training to students in ballooning, testing newly developed meteorological instruments, and finding a safe means of instruction in paramilitary programs.

Few people actually know just how they should deal with a problem such as this, and it took a long time to get the oil company to understand the situation. The small oil companies have offered a safe and reasonable means for such training. The student wears the regular parachute harness which is attached to the propeller mechanism instead of using the basket as an ordinary flight. Ascends up to two thousand feet, or higher as the student and the descent controlled by the propeller. With this situation the student may regulate his ascent and

"If we were declared enemies what would we do for aircraft?"

"If we were declared neutrals what would we do for aircraft?"

British "Light Plane" Competition.

The Royal Aero Club of Great Britain will organize in September next a Light Plane Competition open to machines fitted with engines the total cylinder capacity of which must not exceed 100 cu. in. The maximum weight of the machine should not exceed a mile of 100 ft., and the triangular course of not less than 10 miles with a radius of half a mile each side will be used. One gallon of gasoline only will be allowed, and the weight of the pilot must be made up to a minimum of 160 lb.

In addition to the actual flying the question of transport will be considered, and competitors will be required to demonstrate that the machine is capable of being transported a distance of 100 miles in a period not exceeding three hours. The selected course for this test will simulate getting out of a field through an ordinary gateway and proceeding along a country road. The competition will probably extend over a week early in September.

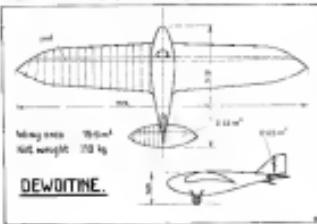
The Duke of Athlone, Under-Secretary of State for Air, has given a £1,000 grant, through the Royal Aero Club, for the flight in the competition (minimum 50 miles), and other prizes will be forthcoming.

In addition to the light plane contest, competitions will be arranged for gliders without engines on somewhat the same basis as those held at Birkdale Hill in October last. Advantage will be taken of the facilities offered by the Royal Aero Club by other countries to make attempts for the Glider Gold Medal of France (see page 10 of this issue).

In connection with this, the first competition for powered airplanes, it is of interest to note that several such machines have recently been produced in Europe, and one, the Dewoitine, has already successfully been flown successfully.

The Dewoitine Light Plane.

The Dewoitine light plane was developed from the glider of the same make on which Georges Leduc remained in the air for 90 min. at the Biarritz gliding meet. The Dewoitine light plane is fitted with a 7-hp. engine and tractor propeller, and, except for its power plant, a Vee type wheel landing gear and tail skid, it is identical with the glider. The engine is mounted horizontally. The light plane weighs not above 360 lb. and is said to consume one gallon of gasoline per 100 miles. The machine has a high speed of 60 m.p.h. and a radius equal to 5½ hr. to keep it in the air at a speed of 40 m.p.h. The landing speed is 20 m.p.h.



Courtesy Dewoitine.

Outline drawing of the Dewoitine glider.

On April 2, M. Leduc made a first flight with this machine, and on the following day he took it up to a height of 1900 ft. and flew it from Frenchman's airport across country to Toulouse, where after crossing the city he landed on the street in front of the Dewoitine factory.

"If we were declared to-warrior what would we do for aircraft?"

In England there have also been produced light planes of late. One of these machines, built to the designs of Mr. Shandorly by the Air Navigation and Engineering Co. of Addlestone, is a cantilever monoplane fitted with a 20 hp. Gnome engine, and is in general resemble the Dornier "Bremen."

The other English light plane, the "Wren," which was designed by W. G. Mason and built by the English Electric Co. of Preston (Lancs.), is also a cantilever monoplane, but it is fitted with a 7-hp. A.S.C. motorcycle engine. This plane greatly differs in appearance from the A.N.E.C. light plane, and is more reminiscent of the Hanover glider, the main axis being supported by a single strut, the tail being carried inside the fuselage, where they are usually located.

The "Wren" is 37 ft. in span, 20 ft. long and just under 5 ft. at height, and it weighs not 250 lb. The machine was flight tested by Test Leader Maurice Wright, first in a few short hops, and then in a flight of 7 min. duration, and it behaved very satisfactorily despite a strong wind. The high speed is given as 60 m.p.h. and the horsepower required for flight as 3½ hp.

Army Airship RNL Completed.

In the plant of Airships Incorporated, at Hammondsport, N. Y., there has just been completed the largest dirigible airship for the Army Air Service to which it was delivered.

The new ship, called the RNL, has a capacity of 320,000 cu. ft. and is 302 ft. long and about 38 ft. in diameter. The gas bag consists of two 160 cu. ft. Lorraine engines which supply a total pressure of 1000 lb. per cu. ft. The envelope is 20,000 cu. ft. and the gross 300,000 lb. The carriage is made of spruce three-ply reinforced fabric, which is coated on the outside with aluminum. The car, 58 ft. in length, accommodates a crew of twelve, which will be the standard complement of the ship. From the car a platform extends forward through the nose, and a lighting platform or top deck, when erect, is provided for a machine gunner and two observers.

The RNL will be stationed at Scott Field, Belvidere, Ill., where she will be used in connection with training activities. At Belvidere there is located the second largest airship shed in the country, which is used as a site early to the naval airship shed at Lakehurst, N. J.

Notice to Aviators

Boston Airport

In Notice to Aviators 8 (2) of 1922 it was stated that the Boston Airport would be opened for early in the spring of 1923. Information has now been received from Headquarters First Corps Area, Army Base, Boston, that the field at the Boston Airport may not be ready for use until June and that landings can not be made on the runways at present as there are less than 50 per cent completed.

Further notice will be given when this field is ready for operation.

(N.A. 8, 1923)

E. S. Coast Survey Chief 368

Fairfield, Ohio

Flight Activities.—Two short plane meets, 300 ft. high and 100 ft. apart, have been organized at the Fairfield Air International Depot, Fairfield, Ohio. These meets are limited due to cost of the large lease, whereabouts between the garage and the test gymnasium. The towers will be illuminated in sequence with existing instructions as soon as the final superstructure has been made.

(See Notice to Aviators 1 (1) of 1922, p. 17.)
(N.A. 4, 1923)

Official Bulletin of
National Aeronautic Association of U.S.A.
Editor-in-Chief, Gen. L. H. Coffey, Secretary, John E. Coffey, Secretary

The National Aeronautic Association of U.S.A. accepts no responsibility for the statements under this heading.

OFFICIAL RECORDS OF AERONAUTICAL PERFORMANCES IN UNITED STATES

There seems to be some misunderstanding throughout the country as regard to the connection between the National Aeronautic Association of U.S.A. and the Federation Aeronautique Internationale, with respect to the authentication of records by the Central Committee of the National Aeronautic Association covering record performances in the United States.

The Press of the country sent statements concerning the record attempt by the Army Air Service to secure the world's record as aerostatic performance at Dayton, proving therein that French officials were at Dayton to witness the contestants and that the F.A.I. was in control, together with other misleading statements, ignoring the N.A.A. altogether.

The truth of the matter is contained in the following:

"The National Aeronautic Association of U.S.A. is now the sole American representative of the Federation Aeronautique Internationale, and in the future, all records, flights for records, sports and meets in this country, as well as to be homologated for purposes of world's records, must be by virtue of its action, the N.A.A."

"Under the F.A.I. the Association appears automatically as record holders for the enforcement of the rules of the Federation, since liaison is poor, and for meets and meets; meetings, meets, meets and sports, classes; aerials; exercises and passes; open regulation and programs for strategic, military, strategic, may be issued from time to time through its various committees, and the American committee of which is the Aerostatic, is a record holder which Americans have the right to strive in. In consequence of this the membership campaign is raking up interests which, beyond question, will soon reach the mark set for June first, 60,000 members. Reports from the field indicate that the membership will probably reach 70,000 by that date."

Confirming the above, Col. Frank P. Lahm, Chairman of the Committee of the N.A.A. has said to the Press Association and the Radios of the association throughout the country the following communication:

"The National Aeronautic Association of the U.S.A. is the American member and sole representative in the United States of its confederation of world aeronautical bodies—the Federation Aeronautique Internationale, whose headquarters is in Paris, France."

"As sole representative the National Aeronautic Association of U.S.A. with headquarters in Washington, D. C., maintains all official aeronautical meet events in this country. Its Central Committee appears all official meets, meets and meets."

"No officials from France or any other country of the Federation Aeronautique Internationale officials at any meet in the United States. The F.A.I. stories are observed to the letter at all standardized American meets."

"The substantiation of a record by the Central Committee of the National Aeronautic Association of U.S.A. is accepted by the F.A.I. and the Central Committee of the Federation Aeronautique Internationale is made up of the following men: Edward B. Seebold, Milton F. Davis, John D. Larion, Charles E. Merrill and Palmer Pease, all of New York."

Official Observer No. 1
George Clegg, of the Central Committee of the National Aeronautic Association as Assistant Official Observer at Station No. 2
Charles E. Merrill, acting as observer at the 500-meter point ladder station No. 1
George F. Smith, acting as observer at the 300-meter point ladder station No. 2.

Three others in charge of the flights of Louis E. A. Marmon and James L. H. Marmon, when Marmon Marmon broke the world's record for one kilometer course, establishing an average speed of 238.05 mph.

THE N.A.A.'S MEMBERSHIP CAMPAIGN

The membership campaign was being conducted by the Association in full swing and progressing most satisfactorily. There is an awakening throughout the entire country to the fact that the American sports motto—First the American, a record holder who Americans have the right to strive in. In consequence of this the membership campaign is raking up interests which, beyond question, will soon reach the mark set for June first, 60,000 members. Reports from the field indicate that the membership will probably reach 70,000 by that date.

Below is a supplementary list of the officials of the American section of the District chairman, a list which is being compiled daily.

FIRST DISTRICT

The District Chairman and his sources in Col. Edgar S. Gould, President of the Boston Museum of Science, The Executive Secretary in Harry Maxwell of Boston.

State Advertising Committees

Mass. W. H. Garrett, Editor and Publisher, Chairman, and Ralph Walker, Secretary, both of Boston, Me.

New Hampshire

May Frank Knob, Chairman, and Guy L. Foster, Secretary, of Manchester, N. H.

Rhode Island

Governor Wm. S. Flynn, Chairman, Providence, R. I.

Penn.

Governor Prather is Chairman of the Advisory Committee of the State of West Virginia of Braxton Co. Chairman of the Garage Committee, Frederick Harris of Braxton Co. It is to him a chapter there.

SECOND DISTRICT

The Executive Secretary is Tom E. Deed, of the Johns Hopkins Univ., New York City. The District Advisory Committee is made up of the following men: Edward B. Seebold, Milton F. Davis, John D. Larion, Charles E. Merrill and Palmer Pease, all of New York.

THIRD DISTRICT

The Executive Secretary is R. P. Stiles of Philadelphia.

FOURTH DISTRICT

The District Chairman is Charles A. Moffet, President

"If we were declared to-warrior what would we do for aircraft?"

Significance of the Puerto Rican Flight.—At a dinner hosted by the Puerto Rican farm at the Army and Navy Club in Washington by Air Service officers on duty in the capital and at Balboa, General Patrick, master of ceremonies, in a warm speech of welcome commanded the high spirit of morale in which the mission was carried out and declared that the lessons learned were of great value and will affect our national defense. Such a spirit is shared by the three sources every chance of a trip around the world.

General Mitchell's first news and gave the significance of the flight. The General stated that the trip was the first being merely a little "joke" trip to Puerto Rico, but had a deep national significance. "The Panama Canal cannot possibly be protected from a modern enemy with a base in the Caribbean Sea," he said. "Therefore, if the Army and Navy would permit it, we can use the Navy," the General added. "Moreover, we can control the Caribbean with a paper base drawn there with the greatest ease. There is surely more than 90 miles of water between the islands which apart, they may show as far as the eye can see. They are the first line of defense. If that is so, then the Army and Navy must be prepared to defend it so that properly it would be necessary to go out to meet the enemy before he could get close enough to us here without us having to take that trip which we can go out and save the water and do so."

General Mitchell pointed that a surprise attack on surprise over the right in the vicinity of several days ago. He stated that Pekin, China, was only 60 km from New York by air, and that the flight there would be undertaken at the proper time. "During my recent inspection tour in the North," he said, "when I went on into Canada, we found out that frozen rivers were the chief obstacle to the movement of supplies. I have been told that surprise equipped with skins" the Indians being the trail to China would be made via the North Pole or at least the Arctic Circle route.

General Patrick also stated Major Lamphier, who led the Puerto Rican expedition, to tell all of the things that happened, and how he had to make a flight.

In concluding the news flights were the review, Major Lamphier stated "it is not a comforting thing to be out nearly a hundred miles from some particular little island that shows on the map, and you hope the wing is right and there is really no need there. Also you wonder if the island is as wide as it is long. You are not sure you are going to hit the island. They took big risks on the water because little freedom for the sea. Neither did I add any comfort to look down at the gleaming banks of man-eating sharks sloping around beneath you."

The student which brought most applause was the flight of the last—"We can fly around the world just as easy as we fly to Puerto Rico."

The following letter of commendation has been sent by the Secretary of War to all the officers who participated in the record-breaking flight of six army planes to Puerto Rico and return.—Capt. Thomas G. Langford, Commandant of Flying, U. S. Army Flying School, St. Louis; Capt. Newton Langford, C. V. Mays, Capt. A. Woodfill, G. G. McDonald, R. E. Shaeff, E. H. Nease, D. H. Denton, Guy Kirksey, and E. T. Seiler.

"I give you great pleasure to commend you for your excellent performance of duty as a number of the members of your organization have done in the record-breaking flight to Puerto Rico and return. The establishment of course, a record in the progress of aeronautics even as good highways considerably the growth of the automotive industry and you have the distinction of being one of the pioneers in mapping out the airways Puerto Rico and the Virgin Islands."

"This flight represents the first major step toward the realization of the purpose of the Congress with respect to the defense of our country and demonstrated the possibility of maintaining an aerial line of defense over the Greater Antilles for the defense of the Panama Canal."

"The fact that this flight of nearly 6000 miles was completed on schedule thus is evidence of good flight organization and is a tribute to your technical ability and mechanical

knowledge which enabled you to continually keep your machines in excellent flying condition. Constant diligence and high expert were necessary to frequently perform such hazardous flights as those made over the Atlantic Ocean."

"Your exploit brings honor to the United States Army, as well as the Air Service. An evidence of my high regard for your achievement, I am directing that a copy of this communication be filed with your official record."

Departure of Air Service Team.—A secret General Order issued by the War Department gives the following revised tables for designating Air Service Units:

Unit	First number of series	Example of present designation
Regular National Guard Army Guard Reserve	1	1— <i>1st</i> (or part of the unit) Squadron, a 4th (or part of the unit) Squadron, etc., etc.
Wings of all types	1	1— <i>1st</i> (or part of the unit) Wing, a 2nd (or part of the unit) Wing, etc., etc.
Groups of all types	1	1— <i>1st</i> (or part of the unit) Group, a 2nd (or part of the unit) Group, etc., etc.
Squadrons of all types	1	1— <i>1st</i> (or part of the unit) Squadron, a 2nd (or part of the unit) Squadron, etc., etc.
Companies of all types	1	1— <i>1st</i> (or part of the unit) Company, a 2nd (or part of the unit) Company, etc., etc.
Battalions of all types	1	1— <i>1st</i> (or part of the unit) Battalion, a 2nd (or part of the unit) Battalion, etc., etc.

Middlebury A.L.D.—The command of the Middlebury Air Detachment has been assumed. This recently has taken place by Maj. R. M. James, A. S. C. who was selected to take over to assume the command of the post for the conduct and convenience of the personnel.

A good deal of much needed repair work has been done to

the various units of equipment. Negotiations for the purchase of a Douglas B-17 Flying Fortress are now in progress and the Massachusetts River has been selected as the principal place under way for the development and expansion of the present landing field and for the erection of a single set of hangars.

The names of officers stationed at Middlebury are as follows: Capt. M. C. Clegg, Capt. C. J. McDonnell, Capt. H. F. Springer, Lieut. E. F. Carr, J. A. Kow, C. E. Elmer. The latter two are now on detached service at Randolph A. F. Base. Lieutenant H. G. W. Slempy, F. S. Olmsted, F. S. Morris, J. G. Tandy, H. K. Lehman, S. P. Loring, E. M. Morris, C. J. O'Leary, Capt. E. G. O'Donnell, Lieut. Jack Greer and R. B. Stoenke of whom have been at the depot for the last two or three years, are leaving for the Philippines Islands and Panama respectively.

Wheeler Field, H. T.—Whistler Field is situated on the cleared plains of Okla, adjacent to and northeast of detached Borroca property. The field, ten months ago, a mass of grassy bushes and scrub trees, with high tension cables transversing it, is now a few square miles of solid earth and constructed asphalt, apparently free of all direction. The buildings which have been completed are the hangar, the mess hall, commissary, mess and passes, post office, the plane, than of the B-17A type, have all been replaced with new B-17B's, and a few JN-4H's.

The Whistler with its full complement of enlisted personnel is at present quartered in the cement barracks of Whistler, but will be moved to concrete quarters on Wheeler Field.

"If we were declared to-morrow what would we do for aircraft?"

32d Squadron Holds Flying Circus.—The 32d Obs. Sqd., stationed at Fort Riley, Kans., recently held a Flying Circus for two days, and the event was a success. The 32d, which is the largest unit at Fort Riley, was all present, and thousands of spectators came from Fort Riley and vicinity to witness the aerial tactics of the circus. Sponsored on the first day by long-haul clubs, the program was nevertheless carried out as per schedule. Much enthusiasm given by Capt. E. G. O'Leary, commander of the 32d.

The "circus" field, known to be one of the best, measures one approximately 1800 ft. square and can be used for landing a third of all directions. Landing runs of both fields are of a soft sandy nature.

A landing "T," white in color, is laid in the center of each field and the landing areas of the field is located on the boundary running west and east, and north and south. The landing "T" is approximately 100 ft. long and 10 ft. wide, and is surrounded by "skids of the Art" as represented as a left hand closed field. There are no additional markings immediately the hangar in a sufficient framework.

U. S. Naval Aviation

Naval Orders.—Comdr. Lester E. Lester, U.S.N.—Detached Bureau of Navigation, 4-25-23; to command U.S.S. Wright.

Lieut. Elmer V. White, U.S.N.—Detached Naval Academy, Annapolis, Md.; to Naval Air Sta., Lakewood, N. J.

Comdr. Roland E. Walker, U.S.N.—Detached Aircraft Squadron Battle Fleet, reassignment accepted 3-23-23.

Lieut. Clarence A. Chamberlain, U.S.N.—Detached U.S.S. Rochester to Naval Air Station, Hampton Roads, Va.

New Arizona Theodore under Test.—A new model of twin engine biplane constructed by the Knudsen and Eickhoff Company was given a trial at the Naval Observatory in Washington. The aircraft was built especially for the purpose of testing pilot helmet readings of the upper arm from the deck of an aircraft carrier or other ship. It was found that certain changes in the method of holding the chronometers will be necessary before it can be used to any great extent in rough seas.

Fast Graduate at MIT in Four JN-4Hs.—The Bureau has taken steps to supply 4 JN-4Hs to the post graduate school at Massachusetts Institute of Technology for flight purposes. This assignment will enable the post graduate students to keep their hand in at active flying while engaged in their studies.

Preparation for International Biplane Race.—A contract has been entered into with the Goodyear Co. for three \$80,000 ft. flying balloons. These balloons will be used in the international balloon race which is to start from Indianapolis, Ind., on July 6.

Naval Air Detach. Naples, R. I.—At present there are four PT squadrons at Naples. An Autocarrier model 42 boat, which is 48 ft. by 120 ft. Hispano-Suiza engined has been assigned to this station and is ready for delivery from the Naval Aircraft Factory.

Plans for Schneider.—Two experimental types of submarine planes will be ready for test during the coming week at the plants of the Goodyear and Martin companies respectively. Both of these little ships are of very interesting design and results of the tests are awaited with great interest.

ZRI Power Plant under Test.—The ZRI power plant completed at the Naval Aircraft Factory is now in operation. It is planned to complete and test the power plant at the Aircraft Factory and ship them to Lakewood to be applied to the hull. The hull structure of the ZRI is practically complete and application of the water jacket has commenced.

"If we were declared to-morrow what would we do for aircraft?"

Naval Air Station, Lakewood, N. J.—Two landing fields for gliders have been established on the station. One field is located to the southwest of the airship shed, the other to the "west" field. The "west" field is located in the east of the post which leads from the air station entrance toward the ship's shed, and comprises an area approximately 1000 ft. wide and 2000 ft. long. The "west" field is 100 ft. wide and 1000 ft. long. The "west" field, however, is not yet in use. The "west" field is located to the west of the "west" field, measures one approximately 1800 ft. square and can be used for landing a third of all directions. Landing runs of both fields are of a soft sandy nature.

A landing "T," white in color, is laid in the center of each field and the landing areas of the field is located on the boundary running west and east, and north and south. The landing "T" is approximately 100 ft. long and 10 ft. wide, and is surrounded by "skids of the Art" as represented as a left hand closed field. There are no additional markings immediately the hangar in a sufficient framework.

Naval Air Station, Hampton Roads, Va.—Experiments are being carried out with the seaplane CT, using pressure pads on the envelope and special registration device to reduce the landing moment resulting when the controls are operated. The device is a small metal frame which fits over the wings which the rudder and flippers can be put over for various speeds without mitering or breaking the ship.

Naval Air Station, Anacostia.—An extended flight was made from this station to Boston, Mass., March 20 to April 5 by Lieut. A. W. Gordon and G. B. Pond. The purpose of this flight was to photograph landing fields en route.

Naval Air Station, Anacostia.—DT and TB planes, both of which are new of short interest to the service, are being delivered at a good rate. So far fourteen DT's and twelve TB planes have been delivered.

One of the DT-2's building at the Naval Aircraft Factory has been converted to a DT-4 by the addition of a Wright 72 engine. Its preliminary tests have been encouraging.

Naval Air Station, Pensacola, Fla.—The class of enlisted men for training as Naval Aviation Pilots has been selected and it is expected to have a class of 60 start training about May 1.

Coming Astronautical Events

AMERICAN

May 10—Fifth Annual Strength Exhibition, Flying Club of Baltimore, Locust Field, Dundalk, Md.

June 4—National Balloon Race
Gat. 14—National Airplane Show, St. Louis, Mo.
Late Fall—Castles Metal Flying Trophy Race.

FOREIGN

May 10—Grand Prix (Belgian), Park, France.
June 10-16—International Auto Congress, London.
July 25—International Auto Exhibition, Godesberg, Germany.
Aug. 12—Sachsenk Motor, Berlin, Germany.
Aug. 1-2—Sachsenk Motor, Berlin, Germany.
Aug. 1-2—Sachsenk Motor, Berlin, Germany.
Sept. 20—Sachsenk Motor, London, England.
Dec. 1—Entente class for French Biplane competition.

Post-Graduate Instruction for Aeronautical Material Officers.—The Chief of Bureau, after examining the situation, has approved the following policy with regard to courses of Post-graduate instruction for aeronautical material officers:

(A)—A certain number of Naval Aviators will be selected to receive a two-month course in aircraft construction. The first year will be spent at the Naval Academy where the instruction will cover fundamental engineering subjects. The second year will be spent at the Massachusetts Institute of Technology as post-graduate students. It is planned to place a limited number of student officers upon completion of the course for a short period of instruction to the Inspector of Engineering, New York, where the students will be given an opportunity to become familiar with the design, construction and testing of aircraft engines, special apparatus, spark plug, carburetors, starting devices, etc.

(B)—Officers of Corps of Naval Constructors will be detailed for work on airplanes and seaplanes from the officers of the Construction Corps who complete the regular Construction Corps Post-graduate course. It is planned to have the officers of the Naval Constructors detail work will be seen fit in the Naval Aircraft Factory under instruction to familiarize themselves with aircraft construction.

(C)—Officers in aviation in aircraft ranks will be detailed from those who have had Post-graduate training in radio.

(D)—Officers to specialize in aircraft ordnance will be detailed from those who have had Post-graduate instruction in ordnance design.

Aircraft Squadrons, Seaplane Fleet.—Seaplane Squadron 1 completed their first crossing of the Atlantic Ocean making the trip. Two planes were transferred to Coco Solo and one was launched while being refueled at Panama. Six planes of the Squadron with Test and Standpage followed the southern coast of Cuba to Guantánamo and then proceeded to Key West. Standpage orders have been issued for U.S.A. Seaplane Fleet to transfer ships and aircraft prior to departure from Key West for Hampton Roads.

Torpedo and Seaplane Plane Squadrons.—Completed prep service for the trip to Hampton Roads and left Key West with seaplane planes April 12.

Aircraft Squadrons, Battle Fleet.—On March 17 a special conducted flight of eight planes from the lead plane squadrons participated in the aerial patrol held by the city of Chicago upon the conclusion of the annual Chicago Air Show. The Chicago Aircraft Association attended. On March 18, an aerial review was held over the Congressional Committee on Armed Lands. The spectators passed over the reviewing point in safety squadrons and witnessed various maneuvers in formation. Upon completion of the review, a number of the Congressmen were given flights.

Fighting Plane Squadrons Two.—Fighting Plane Squadrons Two went into existence March 29, 1923, based at Naval Air Station San Diego, Calif., commanding nine officers and ninth-eight men reported for duty.

Yuma Aviation Group.—M. B. Quisenberry, Va.—Delays have been caused to Major George, Captain Woods, Preedy, Davis, Pace, McKey, 1st Lieutenant Hillebrandt and Second Lieutenant Hill in procuring to the Naval Air Station, San Diego, for the purpose of ferrying four Martin Bombers from that station to Quantico.

U.S. Locomotives.—Reports received from the Los Angeles website that loadings and take-offs from the flying dock are made so frequently that it is becoming a normal matter. Aeromotive 300 and Wright planes are used for such purposes.

"If war were declared to-morrow"



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